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SESSION RESUMED IN FILE 'REGISTRY' AT 18:20:53 ON 01 NOV 2007

FILE 'REGISTRY' ENTERED AT 18:20:53 ON 01 NOV 2007

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	28.35	31.83

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	28.35	31.83

FILE 'REGISTRY' ENTERED AT 18:21:03 ON 01 NOV 2007

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STRUCTURE FILE UPDATES: 31 OCT 2007 HIGHEST RN 952181-70-3  
DICTIONARY FILE UPDATES: 31 OCT 2007 HIGHEST RN 952181-70-3

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TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

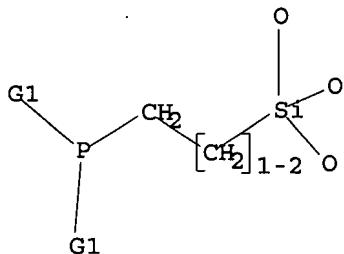
=>  
Uploading C:\Program Files\Stnexp\Queries\10732812-BROADRCE.str

L2 STRUCTURE UPLOADED

=> d 12

L2 HAS NO ANSWERS

L2 STR



G1 Me,Et,Ph

Structure attributes must be viewed using STN Express query preparation.

```
=> s 11
 22020136 1
 2086 DIETHYLPHOSPHINO
 24293915 2
 0 TRIETHOXYSULYLETHANE
L3      0 1-DIETHYLPHOSPHINO-2-TRIETHOXYSULYLETHANE
          (1(W)DIETHYLPHOSPHINO (W) 2(W)TRIETHOXYSULYLETHANE)
```

```
=> s 12
SAMPLE SEARCH INITIATED 18:21:49 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      53 TO ITERATE
```

```
100.0% PROCESSED      53 ITERATIONS          11 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:      624 TO      1496
PROJECTED ANSWERS:          22 TO      418
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L4 11 SEA SSS SAM L2

```
=> s 12 full
FULL SEARCH INITIATED 18:21:54 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -      861 TO ITERATE
```

```
100.0% PROCESSED      861 ITERATIONS          178 ANSWERS
SEARCH TIME: 00.00.01
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L5 178 SEA SSS FUL L2

```
=> file caplus
COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                ENTRY          SESSION
FULL ESTIMATED COST          192.35        224.18
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FILE 'CAPLUS' ENTERED AT 18:22:02 ON 01 NOV 2007
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FILE COVERS 1907 - 1 Nov 2007 VOL 147 ISS 19  
FILE LAST UPDATED: 31 Oct 2007 (20071031/ED)

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<http://www.cas.org/infopolicy.html>

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=> s 15
L6      242 L5

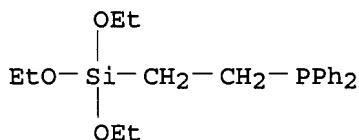
=> s 16 not py > 2003
      4901458 PY > 2003
L7      214 L6 NOT PY > 2003

=> s 17 and copper
      959550 COPPER
L8      7 L7 AND COPPER

=> d 18 ibib abs hitstr 1-
```

YOU HAVE REQUESTED DATA FROM 7 ANSWERS - CONTINUE? Y/(N):y

L8 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:997121 CAPLUS  
DOCUMENT NUMBER: 140:137074  
TITLE: Robust self-assembled monolayer as diffusion barrier for copper metalization  
AUTHOR(S): Mikami, Noboru; Hata, Nobuhiro; Kikkawa, Takamaro; Machida, Hideaki  
CORPORATE SOURCE: Association of Super-Advanced Electronics Technology (ASET), MIRAI, Tsukuba, Ibaraki, 305-8569, Japan  
SOURCE: Applied Physics Letters (2003), 83(25), 5181-5183  
CODEN: APPLAB; ISSN: 0003-6951  
PUBLISHER: American Institute of Physics  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Excellent results on copper (Cu) diffusion barrier characteristics of a self-assembled monolayer (SAM) of 2-(diphenylphosphino)ethyltriethoxy-silane are reported. The thickness and roughness of the SAM were determined by grazing incidence x-ray reflectometry as 1.7 and 0.3 nm, resp. To evaluate Cu diffusion barrier performance of the SAM, Cu/SiO<sub>2</sub>/Si and Cu/SAM/SiO<sub>2</sub>/Si MOS capacitors were prepared to measure their lifetimes under the 2 MV/cm elec. bias at 498-548 K. The mean times to failure obtained from the Weibull plots of time to failures were 33.6, 9.24, 4.57, and 2.03 h at 498, 523, 533 and 548 K, resp. These values show that the barrier characteristic of the SAM of 1.7 nm in thickness is comparable to that of phys.-vapor-deposited Ta film of 20 nm in thickness. The estimated lifetime of the SAM barrier at the device operation temperature of 392 K is longer than 10 yr.  
IT 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane  
RL: TEM (Technical or engineered material use); USES (Uses)  
(monolayers; robust self-assembled monolayer as diffusion barrier for copper metalization)  
RN 18586-39-5 CAPLUS  
CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:744563 CAPLUS

DOCUMENT NUMBER: 128:25955

TITLE: Formation of Crystalline Nanoclusters of Ag, Cu, Os, Pd, Pt, Re, or Ru in a Silica Xerogel Matrix from Single-Source Molecular Precursors

AUTHOR(S): Carpenter, Joseph P.; Lukehart, C. M.; Milne, Stephen B.; Henderson, D. O.; Mu, R.; Stock, S. R.

CORPORATE SOURCE: Department of Chemistry, Vanderbilt University, Nashville, TN, 37235, USA

SOURCE: Chemistry of Materials (1997), 9(12), 3164-3170

CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Metal complexes containing bifunctional ligands which possess alkoxy silyl functional groups have been prepared for seven metals of the first, second, or third transition metal series. Incorporation of these single-source precursors into silica xerogel matrixes using sol-gel chemical affords molecularly doped xerogels. Subsequent thermal treatment of these doped xerogels under reducing or oxidizing-then-reducing conditions affords nanoclusters of Ag, Cu, Os, Pd, Pt, Re, or Ru which are highly dispersed throughout the bulk of the xerogel matrix. Characterization of these nanocomposite materials by TEM, EDS, XRD, and electron diffraction indicates that the metal nanoclusters are highly crystalline. A visible spectrum of the silver nanocomposite shows the expected surface plasmon resonance near 415 nm.

IT 199395-67-0P 199395-68-1P 199395-69-2P

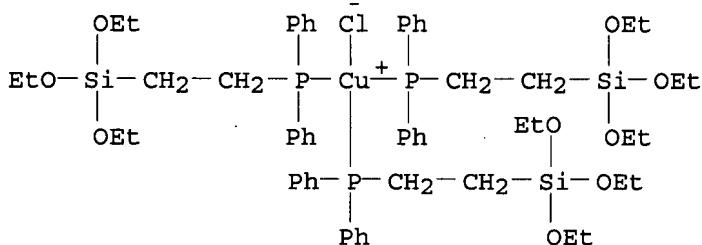
199395-70-5P 199395-72-7P

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(mol. precursor; formation of crystalline nanoclusters of transition metals in a silica xerogel matrix from single-source mol. precursors)

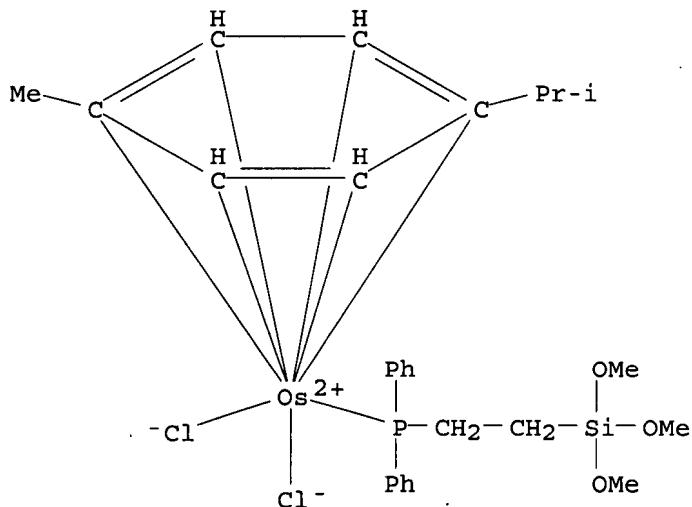
RN 199395-67-0 CAPLUS

CN Copper, chlorotris[diphenyl[2-(triethoxysilyl)ethyl]phosphine- $\kappa$ P]-, (T-4)- (9CI) (CA INDEX NAME)



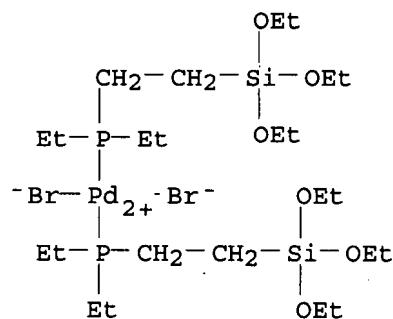
RN 199395-68-1 CAPLUS

CN Osmium, dichloro[diphenyl[2-(trimethoxysilyl)ethyl]phosphine- $\kappa$ P] [(1,2,3,4,5,6- $\eta$ )-1-methyl-4-(1-methylethyl)benzene]- (9CI) (CA INDEX NAME)



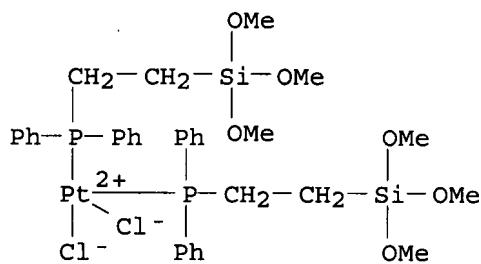
RN 199395-69-2 CAPLUS

CN Palladium, dibromobis[diethyl[2-(triethoxysilyl)ethyl]phosphine- $\kappa$ P]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 199395-70-5 CAPLUS

CN Platinum, dichlorobis[diphenyl[2-(trimethoxysilyl)ethyl]phosphine- $\kappa$ P]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 199395-72-7 CAPLUS

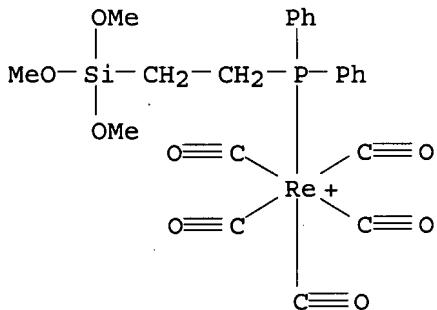
CN Rhenium(1+), pentacarbonyl[diphenyl[2-(trimethoxysilyl)ethyl]phosphine- $\kappa$ P]-, (OC-6-22)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 199395-71-6

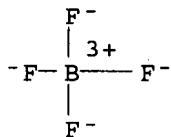
CMF C22 H23 O8 P Re Si

CCI CCS



CM 2

CRN 14874-70-5  
 CMF B F4  
 CCI CCS



REFERENCE COUNT: 64 THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

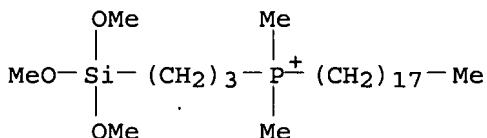
L8 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:769932 CAPLUS  
 DOCUMENT NUMBER: 123:163290  
 TITLE: Antimicrobial inorganic powders with phosphonium derivatives for industrial uses  
 INVENTOR(S): Takatsu, Shozo; Iijima, Toshio; Hashimoto, Kazuyoshi; Inaba, Yoshiko; Shimura, Seiji  
 PATENT ASSIGNEE(S): Nippon Chemical Ind, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07165518	A	19950627	JP 1993-342335	19931214
PRIORITY APPLN. INFO.:			JP 1993-342335	19931214

OTHER SOURCE(S): MARPAT 123:163290  
 AB An antimicrobial composition is prepared by coating inorg. powder with organosilicon phosphonium salts (R1)3SiR2P+(R3)(R5)R4-X- where R1 = alkoxy, halo, acyl, one of 3 R1 may be OH; R2 = C1-6 alkylene; R3, R4, R5 = H, C1-20 alkyl, aryl, aralkyl, etc.; X = anion. The powder is chemical stable, resistant to heat, and effective against a wide spectrum of microorganisms. The inorg. powders include oxides, hydroxides, silicates, aluminosilicates, phosphates, polyphosphates, borates, sulfates, carbonates, metallic acid salts of Mg, Ca, Ba, Sr, Zn, Cu, Mn, Ni, Al, Fe, Cr, Ti, Si, and Zr.

IT 167221-68-3  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BIOL (Biological study)  
 (inorg. powders with antimicrobial phosphonium metal derivs. for  
 industrial uses)  
 RN 167221-68-3 CAPLUS  
 CN Phosphonium, dimethyloctadecyl[3-(trimethoxysilyl)propyl]-, chloride (9CI)  
 (CA INDEX NAME)

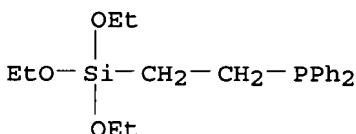


● Cl<sup>-</sup>

L8 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:559767 CAPLUS  
 DOCUMENT NUMBER: 122:304513  
 TITLE: Metallic foil with adhesion-promoting layer  
 INVENTOR(S): Poutasse, Charles A., III; Kovacs, Andrea M.  
 PATENT ASSIGNEE(S): Gould Electronics Inc., USA  
 SOURCE: Eur. Pat. Appl., 23 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

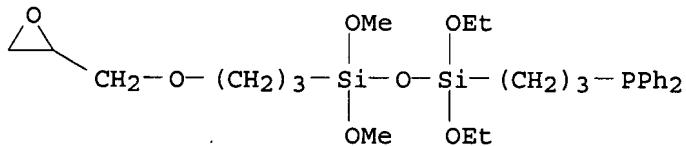
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 637902	A1	19950208	EP 1994-305740	19940803
EP 637902	B1	19990331		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE AT 178451	T	19990415	AT 1994-305740	19940803
JP 07170064	A	19950704	JP 1994-185028	19940805
CN 1106977	A	19950816	CN 1994-115038	19940805
PRIORITY APPLN. INFO.:			US 1993-103075	A 19930806

OTHER SOURCE(S): MARPAT 122:304513  
 AB This invention relates to a metallic foil, especially for printed-circuit  
 boards, with an adhesion-promoting layer overlying ≥1 side of the  
 foil, the adhesion-promoting layer comprising ≥1 silane coupling  
 agent, the base surface of the foil underlying the adhesion-promoting  
 layer being characterized by the absence of added surface roughening, the  
 absence of Cr, and the absence of a layer of Zn or Cr adhered to the base  
 surface.  
 IT 18586-39-5, 2-(Diphenylphosphino) ethyl triethoxy silane  
 RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)  
 (metallic foil with adhesion-promoting layer containing)  
 RN 18586-39-5 CAPLUS  
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)

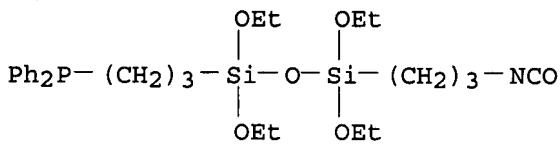


L8 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1994:56153 CAPLUS  
 DOCUMENT NUMBER: 120:56153  
 TITLE: Silane coupling agents for metalization of polymeric substrates  
 INVENTOR(S): Swei, Gwo; Kristal, Kenneth W.  
 PATENT ASSIGNEE(S): Rogers Corp., USA  
 SOURCE: U.S., 7 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5233067	A	19930803	US 1990-522375	19900508
PRIORITY APPLN. INFO.:				
AB Polymeric substrates are metalized by contacting the surface of an etched substrate with a difunctional silane coupling agent and then depositing a metallic layer over the surface. Melt-extruded TE-97645 substrate was etched, treated successively with CH <sub>2</sub> :CHSi(OMe) <sub>3</sub> (I) and HS(CH <sub>2</sub> ) <sub>3</sub> Si(OMe) <sub>3</sub> (II), dried, baked, and coated electrolessly with Cu to give a sample showing peel strength 13-15 lb/in and no significant reduction after thermal aging, compared with 7 and significant reduction, resp., for a similar sample without I and II.				
IT 151535-59-0	151535-61-4			
RL: USES (Uses) (coupling agent, for polymer metalization)				
RN 151535-59-0	CAPLUS			
CN	Phosphine, [3-[1,1-diethoxy-3,3-dimethoxy-3-[3-(oxiranylmethoxy)propyl]disiloxanyl]propyl]diphenyl- (9CI)	(CA INDEX NAME)		



RN 151535-61-4 CAPLUS  
 CN Phosphine, [3-[1,1,3,3-tetraethoxy-3-(3-isocyanatopropyl)disiloxanyl]propyl]diphenyl- (9CI) (CA INDEX NAME)



L8 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:681283 CAPLUS  
 DOCUMENT NUMBER: 115:281283  
 TITLE: Manufacture of metal-coordinating organic silicon polymers  
 INVENTOR(S): Sakata, Kanji; Okizaki, Akio; Kunitake, Toyoki  
 PATENT ASSIGNEE(S): Research Development Corp. of Japan, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

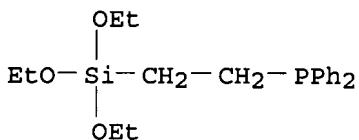
CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM.. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03170529	A	19910724	JP 1989-309926	19891129
JP 2795379	B2	19980910		

PRIORITY APPLN. INFO.:  
 AB Title polymers useful for absorption, separation, and concentration of metal ions are manufactured by coordinating R<sub>1</sub>nR<sub>2</sub>mSi(OR)<sub>4-n-m</sub> (R<sub>1</sub> = organic group containing metal

ion coordinatable group; R<sub>2</sub> = organic group without metal ion coordinatable group; m = 0-2; n = 1-3) with metal ions, hydrolyzing and polycondensing the resulting metal ion-coordinated alkoxy silanes, and removing the metal ions. Thus, 10 parts NH<sub>2</sub>(CH<sub>2</sub>)<sub>3</sub>SiOMe<sub>3</sub> (I) was treated with 35 parts CuCl<sub>2</sub> in MeOH, polymerized in the presence of NH<sub>4</sub>OH at 150° for 3 h, and immersed in 1N HCl to give white polymer which showed Cu absorption 20% in 1% CuCl<sub>2</sub> for 24 h, vs. <0.01 when I was hydrolytically polymerized without CuCl<sub>2</sub>.

IT 18586-39-5DP, 2-(Diphenylphosphino)ethyltriethoxysilane, metal complexes  
 RL: PREP (Preparation)  
 (manufacture and hydrolytic polymerization)  
 RN 18586-39-5 CAPLUS  
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)



L8 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1985:406483 CAPLUS  
 DOCUMENT NUMBER: 103:6483  
 TITLE: Gas chromatographic study on interactions of olefins with chemically bonded transition metal complexes  
 AUTHOR(S): Wasiak, Wieslaw  
 CORPORATE SOURCE: Wydzial Chem., Uniw. A. Mickiewicza, Poznan, 60-780, Pol.  
 SOURCE: Chemia Analityczna (Warsaw, Poland) (1984), 29(2), 211-20  
 CODEN: CANWAJ; ISSN: 0009-2223  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The packings Si:Si(OEt)(CH<sub>2</sub>)<sub>2</sub>PPh<sub>2</sub>.MCl<sub>2</sub> (M = Ni, Cu) were prepared from the reaction of SiOH groups on silica surface with (EtO)<sub>3</sub>Si(CH<sub>2</sub>)<sub>2</sub>PPh<sub>2</sub> and MCl<sub>2</sub>; the complex is able to bind an addnl. ligand e.g., olefins. Lability of such complexes is a condition for chromatog. separation of alkenes. The columns packed with the bonded diphenylphosphine complexes were used for gas-chromatog. separation of mixts. of alkanes and alkenes, styrene derivs. ketones, and chloroalkanes.  
 IT 18586-39-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with metal chlorides and silica)  
 RN 18586-39-5 CAPLUS  
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)

